RCRA FACILITY ASSESSMENT
OF GE FANUC AUTOMATION
Seminole Trail Plant
P.O. Box 8106, Route 29 North
CHARLOTTESVILLE, VIRGINIA
EPA ID# VAD980551782

DRAFT

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I. EXECUTIVE SUMMARY

GE Fanuc Automation North American, Inc., Seminole Trail location, located near Charlottesville in Albermarle County, Virginia, is a manufacturing facility whose products include programmable controllers, numerical controls, industrial computers, manufacturing software, factory automation systems, data communications networks, and printed circuit boards. The facility is located in the Valley region of Virginia on 53 acres approximately one mile from Pine Mountain (in the Blue Ridge Mountains), and employs between 800 and 1000 personnel. The facility is bordered along the north by State Route 606; on the east side by State Routes 606 and 763; to the south by US Highway 29; and to the west by the Briarwood Housing Subdivision. The region immediately surrounding the site has been classified as light industrial. The facility is approximately 100 feet from the nearest residential dwelling, which is currently under construction to the west in the Briarwood Housing Subdivision.

As a result of this RCRA Facility Assessment (RFA), 20 Solid Waste Management Units (SWMUs) have been identified at the facility, 13 of which are RCRA-regulated (See Attachment I for SWMU locations). The SWMUs are listed as follows:

Unit 1 - Former Industrial Waste Treatment facility
- a. Batch Treatment Tank
- b. Filter Building
- c. Transfer/Mixing Sump
- d. Final Effluent (Equalization Tank) Tank

* Unit 2 - Former IWT Bulk Storage Tank
* Unit 3 - Former IWT Drum Storage Area
Unit 4 - Solvent Recovery Still 1
Unit 5 - Solvent Recovery Still 2
* Unit 6 - Equipment Room Spent Etchant Tank
* Unit 7 - Photo Lab IWT Interim Storage Tank
* Unit 8 - Equipment Room Satellite Accumulation Area
* Unit 9 - Plating Solution Sump
* Unit 10 - Plating Room Bulk Storage Tank
Unit 11 - Present Industrial Waste Treatment (IWT) Plant
- a. New IWT Batch Treatment Tank
- b. Agitator
- c. Filter Building
- c. Transfer Sump
- d. Influent Sump
- e. Mixing Sump
- f. Final Effluent (Equalization) Tanks

* Unit 12 - Hazardous Waste Storage Building (HWSB)
* Unit 13 - C Processor Satellite Accumulation Area
* Unit 14 - IWT Hazardous Waste Accumulation Area
* Unit 15 - Photo Lab Hazardous Waste Accumulation Area

* Unit 16 - Photo Lab Satellite Accumulation Area
* Unit 17 - Drilling Room Dust Collector
  Unit 18 - Septic Field/Septic Tank(s)
  Unit 19 - Sanitary Sewage Lift Station
  Unit 20 - Sanitary Sewage Ejector Station

*RCRA-regulated units

II. INTRODUCTION

This report represents a RCRA Facility Assessment (RFA) of the GE Fanuc Automation, Albermarle County, Virginia plant. It is based on the U.S. EPA's October 1986 Resource Conservation and Recovery Act (RCRA) Facility Assessment Guidance Document. Information regarding hazardous waste management at the GE Fanuc Automation plant was obtained from the following main sources:

- RCRA Part A and B permit applications, including revisions.
- Field notes and photographs from the Visual Site Inspections (VSI) conducted on March 27 and 28, 1991.
- U.S. EPA inspection reports, interdivisional correspondence and letters.
- Virginia Department of Waste Management inspection reports and internal memoranda.
- Conversations with Mr. James Morrisard, Engineer, Environmental, Safety and Health Programs.

Additional references are cited in footnotes and listed in the Bibliography at the end of this RFA.

The Solid Waste Management unit response letter from GE Fanuc Automation dated April 11, 1986[1] identified 8 Solid Waste Management Units (SWMUs). A Visual Site Inspection (VSI) was conducted on March 27 and 28, 1991, during which GE Fanuc Automation officials provided additional process and SWMU information. The photographs from these visits are attached to this report as Attachment VI.

Mr. Jerry Stenger of the State Climatologist's office was consulted for temperature and precipitation data.

Mr. Neil Obenshain of the State Water Control Board's Roanoke regional office was consulted regarding past spills at the facility. The data found by Mr. Obenshain corresponds to that presented in this RFA under "History of Releases" for each applicable Solid Waste Management Unit.

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[1] Solid Waste Management Unit Response Letter dated April 11, 1986 from James Morrisard of GE Fanuc to Stephen Wassersug of EPA Region III and Wladimir Gulevich of the Virginia Bureau of Hazardous Waste Management.

Mr. Marshall Irving of the Department of Air Pollution Control's Main Office, and Mr. Ward Butler of the Fredericksburg Regional office were contacted regarding any air pollution releases or air quality monitoring at the facility. Mr. Butler stated that the facility had done some stack testing and ambient monitoring of manufacturing areas on its own, independent of DAPC requirements. The DAPC does not maintain copies of these records.[2]

The National Response Center was contacted regarding any reported releases from the facility. The data from the National Response Center corresponds to that obtained from the facility and listed under "History of Releases".

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[2] Conversation with Mr. Ward Butler, Department of Air Pollution Control on 5/14/91 at (804) 589-3700.

III. FACILITY AND PROCESS DESCRIPTION

GE Fanuc Automation North American Inc., located in Albermarle County, Virginia, near the city of Charlottesville, is a manufacturer of industrial products including programmable controllers, numerical controls, industrial computers, manufacturing software, factory automation systems, printed circuit boards and data communications networks. At this location, the facility conducts laboratory research, research and development, and manufacturing operations to produce these products.[3]

Prior to GE Fanuc's operation at the site, the General Electric Company had been operating a manufacturing and hazardous waste storage facility at the site since December 4, 1978. This location, renamed GE Fanuc Automation, became part of a joint venture company between General Electric Company and Fanuc Ltd., a Japanese company, effective December 29, 1986.[4]

Originally, the only manufacturing which took place at the site was printed circuit boards fabrication (including electroplating). However, in 1982, the General Electric facility located on Harris Street in Charlottesville began relocating certain of its operations to the Seminole Trail site in Albermarle County. At that time, the Seminole Trail Site underwent much construction and enlargement in order to be able to accommodate the new operations.[5]

GE Fanuc automation has had interim status for the storage of hazardous waste in containers and two bulk tanks since July 29, 1981, for storage of the following hazardous waste codes: D001, D002, D003, F001, F002, F005, F006, F007, F008, F009. The original Part A application for the facility was received by EPA on January 14, 1981 for the General Electric Company, which was subsequently granted interim status for tank storage, container storage, and wastewater treatment. A revised Part A application received February 3, 1982, modified the quantities to be stored at the site and deleted the wastewater treatment operation. Another revised Part A was received when the facility submitted its Part B application in November, 1988, which again modified

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[3]Facility Management Plan, GE Fanuc Automation, February 26, 1990, page 4.

[4] Part B Permit Application.

[5] Information provided by James Morrisard, Heath & Safety Officer, during the VSI conducted on March 27 & 28, 1991.

the amounts to be stored at the facility.[6] The company submitted the Part B application to obtain a permit for storage of hazardous waste in containers and tanks. The Part B application is currently under review at the Virginia Department of Waste Management.[7]

GE Fanuc Automation North American Inc. generates seventeen different waste streams on-site:

1) Waste halogenated solvents generated in degreasing, stripping and cold cleaning operation in the Printed Circuit Board Fabrication and Assembly Operations (spent methylene chloride and 1,1,1-trichloroethane, hazardous waste codes F001, F002);

2) Waste sludge from the operation of the on-site Industrial Waste Treatment Facility (IWT). The IWT treats rinse waters from the on-site Printed Circuit Board Fabrication Operations (hazardous waste code F006);

3) Spent photographic solution from the fixer/developer baths from the on-site Photo Lab (hazardous waste codes D006/D011);

4) Material generated by the Printed Circuit Board flow soldering and cleaning operations (hazardous waste codes D001, F002);

5) Material generated by the Hybrid and IC manufacturing operations. This includes waste toluene, glycol ethers, and methylene chloride (hazardous waste codes F005, D001, F002);

6) Solution from spent plating baths from electroplating operations in the printed circuit board fabrication operations (hazardous waste codes D002/D008; F007/F008);

7) Crystallized copper ammonium chloride and crystallized copper sulfate solids (hazardous waste code D002);

8) Waste ammonium hydroxide etchant used to strip copper off printed circuit boards during the fabrication process (hazardous waste code D002);

9) Waste petroleum naphtha from flushing and recharging of the computer aided drafting system which produces blueprint drawings (hazardous waste code D001);

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[6] Revised Facility Management Plan, April 12, 1991.

[7] Facility Management Plan, GE Fanuc Automation, February 26, 1990.

10) Waste paint and sludge containing methyl ethyl ketone as part of the original formulation (hazardous waste code D035);

11) Waste cartridges containing methylene chloride, acetone, TCEA and Freon from printed circuit board fabrication operation (hazardous waste codes D008, F002, F003);

12) Waste lead solution TL143 (hazardous waste code D001, D002, D008);

13) Waste JL800 solution generated from printed circuit board screening operations. This waste contains a mixture of 1,1,1-trichloroethane, trichloroethylene and IPA (hazardous waste code D040, F002);

14) Drill and Routing dust from drilling dust collection cyclone found to be TC for lead (hazardous waste code D008);

15) Waste mixture of MCMI/AP727 from silk screening operation containing methylene chloride and glycol ethers and waste AP272 glycol ethers from the same operation (hazardous waste codes D001, F002);

16) Waste T-71 mixture from Tampo print operations, containing xylene and n-butanol (hazardous waste codes F003, F005);

17) Waste oil and grease.[8]

According to the Facility Management Plan, there have been no documented variations (except the addition of new processes) from current plant processes since the facility originally began operation on December 4, 1978.[9] More information on the new processes is included in the next section.

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[8]Facility Management Plan, GE Fanuc Automation, February 26, 1990, page 5.

[9]Facility Management Plan, GE Fanuc Automation, February 26, 1990, page 5.

IV. PAST FACILITY PROCESS INFORMATION

The General Electric Company operated a newly-constructed facility at the site beginning in 1978. Prior to that time, the area was a wooded area with no industrial uses. This location, renamed GE Fanuc Automation, became part of a joint venture company between General Electric Company and Fanuc Ltd., a Japanese company, effective December 29, 1986.[10]

Beginning in 1978, the General Electric Facility started operations which consisted of the manufacture of printed circuit boards, including electroplating. The original site consisted of approximately 40,000 square feet in the manufacturing and administrative areas. From 1978 until 1980, the industrial waste treatment system and container storage area were located in their former location. Between 1980 and 1982, the facility size was increased as a new wing was added and the technical center was built (facility manufacturing and administrative areas increased to over 300,000 square feet). At this time, the decision was made to relocate the industrial waste treatment plant and drum storage area to their current locations. Also, at this time, a Part A application was filed for the new hazardous waste storage activities to be conducted. From 1978 until 1982, the only manufacturing process conducted at the facility was printed circuit board fabrication, from which the wastewaters were treated and discharged via a National Pollution Discharge Elimination System (NPDES) permit.

Starting in 1982, the manufacturing operations formerly conducted at General Electric's Harris Street location in Charlottesville were gradually moved to the Seminole Trail location. Assembly and Testing were moved from the Harris Street location, followed by Drives and Devices. The Seminole Trail plant was now responsible for fabrication, assembly, testing, packing and shipping. Also, the Computer Numerical Control manufacturing operation was moved from General Electric's Richmond plant to the Seminole Trail plant in 1982.

Following the 1986 joint venture between General Electric and Fanuc, the site began a new manufacturing operation - the manufacture of Program Logic Control (PLC). Also, since 1986, the Seminole Trail site has functioned as the headquarters for the GE Fanuc Corporation.

Other than the addition of new processes and the moving of the waste treatment system and drum storage areas, there have

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[10] Part B Permit Application.

been no documented variations from current plant processes since the facility originally began operation.[11]

According to Mr. Morrisard, the facility has performed air quality stack testing of the manufacturing area venting stacks in the past. Mr. Morrisard did not recall when this testing was performed, but stated that it could have taken place prior to 1982, when the facility added additional processes to the facility, rendering the data no longer applicable. Mr. Morrisard also stated that while ambient air quality monitoring of the manufacturing areas is performed periodically, if infrequently, the facility has not monitored air quality at any of the SWMUs listed in the report, with the possible exception of SWMU 17, the Drill Dust Collector, of which Mr. Morrisard was not certain. However, Mr. Morrisard did not have these copies available for perusal by the Department.[12]

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[11] Information provided by James Morrisard, GE Fanuc Health & Safety Officer, during the Visual Site Inspection.

[12] Telephone conversation with Mr. James Morrisard, 5/14/91.

V. DESCRIPTION OF FACILITY ACTIVITIES BY AREA

[Note: All references are made to facility map A, found in Attachment I. All information was obtained from current facility personnel during the Visual Site Inspection.]

Warehouse #1
The facility's laser research laboratory and product storage areas are located in this building. No waste is generated in the laser research laboratory, except a one-time generation of waste paint.

Warehouse #2
Serves as a product storage area.

Chemical Storage
Serves as a storage area for raw material.

HWSB (Hazardous Waste Storage Building)
Container storage of both hazardous waste and raw materials. The container storage area currently has interim status and a Part B application has been filed to obtain a hazardous waste management permit for the area. The area also houses a bulk storage tank for non-treatable hazardous plating waste.

IWT (current Industrial Waste Treatment system)
Relocation of the former waste treatment system. Area contains Batch Treatment Tank, 2 effluent (equalization) tanks (one added in 1982), filter building, and three compartmentalized sumps - transfer, mixing and influent sumps.

IWT (former Industrial Waste Treatment system)
Former location of the industrial waste treatment system until 1982. The area contains one transfer/mixing sump, a filter building, a final effluent (equalization) tank, and a batch treatment tank.

Tech Center
Contains the photo lab, which generates D006 and D011 hazardous waste. Also contains ejection molding equipment, which does not generate any hazardous waste. Repair and return of products takes place in the tech center, as does the design and building of Quality Information Test Equipment.

Jefferson Building
Also known as the "Group Building", this building is the site for marketing activities.

Administration
This building houses administration, engineering, marketing, finance, employee relations, cafeteria, auditorium, employee store, and the facility travel agency.

Manufacturing

This building houses: printed circuit board fabrication, assembly and testing operations; printed circuit board hybrid operations (i.e., component manufacture); Computer Numerical Control assembly and testing; Motor assembly for control equipment; stock room; warehouses; shipping/receiving; and incoming inspection.

VI. ENVIRONMENTAL SETTING

A. Meteorology - The facility is located in Albermarle County near the City of Charlottesville, which is situated in the Valley region of Virginia, approximately 1/2 mile from the nearest of the Blue Ridge Mountains, known as Pine Mountain (see Attachment I). The climate of Charlottesville and the surrounding area is mild, with an average mean temperature of 56.8 degrees Fahrenheit. The City experiences an average of 31 days annually with a mean high of 90 degrees Fahrenheit or better, and 12 days with a high less than 32 degrees Fahrenheit. The mean low temperature is less than 32 degrees Fahrenheit on an average of 87 days annually, and less than 0 degrees on 0 days annually. Recorded temperature extremes during this period are 107 degrees Fahrenheit, and -2 degrees Fahrenheit. Freezing temperatures do not usually occur between April 6 and November 2. Rainfall averages 45.72 inches per year, with summer and fall the wettest periods. The mean snowfall is 24.2 inches annually.[13] An annual wind rose of the meteorological data for Charlottesville is included in Attachment IV.[14]

B. Floodplain and Surface Water - The facility is located well above the 100-year floodplain of the nearest stream, Herring Branch of the North Fork of the Rivanna River, based on a review of the Flood Insurance Rate Map provided with the Part B Application (See Attachment I for map). Most of the facility and the region surrounding it lie in Zone C areas, which are identified as areas with potential for minimal flooding.[15] Water service to GE Fanuc is through the Rivanna Water and Sewer Authority's six (6) inch pipeline which runs along Route 606. The intake of the water plant is on the North Fork of the Rivanna River. The potable water line is 800 feet from the Industrial Waste Treatment (IWT) Facility. The nearest residence is 1200 feet from the IWT Facility. The residential area in this vicinity is also serviced by the Rivanna Water and Sewer Authority. There are no wells located on the plant site. The Hazardous Waste Storage Building is well over 1500 feet from the nearest limit of the Herring Branch, North Fork Rivanna River 100-year

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[13] Information provided by Mr. Jerry Stenger of the State Climatologist's Office.

[14] Included in the Part B Facility Permit Application.

[15] Part B Permit Application, November, 1988.

floodplain.[16] There are no known uses, either commercial or recreational for the Herring Branch, North Fork Rivanna River. The Camelot POTW (Publicly Owned Treatment Works) is located approximately 1/2 mile downstream from the facility. There are no plants located upstream of the facility. The Herring Branch runs in an approximately North to South direction, and intersects the North Fork about one mile downstream of the facility.

C. Geology and Soils - The facility is located about 1 mile north of the North Fork of the Rivanna river, and about 1/2 mile south of Pine Mountain on Route 29. The facility is geologically located on a contact of the Lovingston formation, with injections of igneous rocks, and the Lynchburg formation. Both formations are Precambrian in age (greater than 600 Million years old). The Lovingston formation (pClgr) is the older geologic unit. The formation is quite variable, but consists mainly of a coarse-grained quarts monzonite. The formation has a very continuous phase in this area that has been highly altered by injections of igneous rocks. This unit is about 1 1/4 miles wide in this area. The Lynchburg formation (pClyg) is a fine-grained, silty graphitic and sericitic schist and thick beds of quartz biotite gneiss. This unit is about 2 miles wide in this area. Both formations trend northeast-southwest and the contact is not faulted, as is common in the general area. The contact is thought to dip at about 80 degrees to the east. General Electric hired a contractor to conduct a foundation boring program around January, 1978. About 33 borings were made site-wide and those borings describe the weathered and decomposed bedrock at the site. The boring descriptions consist of mostly red, brown, and grey micaceous silts with varying amounts of sand (which should actually be termed "quartz" since they are residual rather than alluvial in nature). Most borings were terminated at about 30 feet with firm bedrock not encountered. Several borings were taken to about 50 feet deep without firm rock being contacted. However, rock was encountered in four boring at 12 to 26 feet deep. The rock was cored with a diamond core barrel in those borings and recovery ranged from 46 to 100%. In all of those borings, the recovered rock core was described as a grey granite rock. Five of the borings were made by a second consulting firm which described the materials as decomposed schist and gneiss. Both sets of borings were made site-wide and described the same materials, thus it is not possible to state positively

[16] Part B Permit Application, November, 1988.

which geologic unit the site lies on.[17],[18] The soils are the Hayesville-Ashe-Chester series. The soils are deep and moderately deep, well-drained and somewhat excessively drained with a loamy subsoil. As noted, these soils have developed from decomposition of the igneous and metamorphic rocks. Specific soils engineering data (see Attachment X) is available from the above-noted boring log sheets.[19]

D. Groundwater - Groundwater at the site is stored in weather and decomposed bedrock (residuum or saprolite) and in fractures within the underlying competent bedrock. Regionally, groundwater production is very sporadic and dependent on local fractures and surface topography. A review of a publication "Water-Well Data, Western Part of Albermarle County" by Whitman Cross II shows that wells in that area of the county range from 40 to 240 feet deep and have a yield of about 2 to 50 gallons per minute (gpm). Further review of the data shows that wells completed in the Lovingston formation (on which most or all of the rests) average 145 feet deep and 16 gpm yield. Wells completed in the Lynchburg formation average 78 feet deep and 5 gpm.[20]

There are no groundwater monitoring wells at the facility; however, the above-noted test borings provide some information on groundwater depth, etc. The boring logs note whether or not groundwater was contacted or the boring was dry, the depth to groundwater, and (sometimes) the water depth after the drilling was completed. The borings ranged in depth from 17.5 to 50.5 feet with an average of 30 feet deep. Therefore, groundwater may have been contacted if the boring had penetrated deeper in the formation. Groundwater was contacted in 22 of the 33 borings. The depth to groundwater was quite variable, ranging from 2 to 35.5 feet below the ground surface. The average depth to groundwater after the boring was completed was 19 feet in those borings that contacted groundwater. The groundwater in two borings

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[17] Geologic Map, Albermarle County, Virginia, 1962, by Wilbur A. Nelson.

[18] Geologic Map: Soil Boring Logs and Plan of Property, January 16, 1978.

[19] Soil Survey of Albermarle County, U.S. Department of Agriculture, Soil Conservation Service in cooperation with Virginia Tech, August, 1985.

[20] Water-Well Data: Western Part of Albermarle County, Charlottesville, Virginia, 1960. Information Circular 2, by Whitman Cross II, Dept. of Conservation and Economic Development, Division of Mineral Resources.

disappeared after a period of 1 to 6 days.[21] It appears that the groundwater occurrence at the site is quite sporadic and dependent on the subsurface materials, tightness of the formation and possibly fractures in the weathered and competent bedrock. Groundwater may be contacted, perched or artisan at the facility.

There is no known usage for the groundwater surrounding the facility. The water which is used by GE Fanuc and the surrounding population comes from the Rivanna Water and Sewer Authority, where the source for the water supply is surface water from the river. There are no known drinking water supplies downgradient to the facility - the Camelot POTW is located approximately 1/2 mile downstream of the facility. The facility utilized a septic tank during its early period of operation, from late 1978 until mid-1979. At that time, the facility hooked up to the Rivanna Water & Sewer Authority. Currently, all sewage is hard piped to the Rivanna Water and Sewer Authority. There have not been any documented releases of solid or hazardous waste to the groundwater. A 10,000 underground fuel oil storage tank was removed at the facility in 1988. No holes in the tank or resultant contamination was noted upon removal.[22]

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[21] Geologic Map: Soil Boring Logs and Plan of Property, January 16, 1978.

[22] Information provided by James Morrisard, Health & Safety Officer, GE Fanuc, during the VSI conducted on March 27-28, 1991.

VII. RELEASE PATHWAYS

Release pathways considered during the RFA study include air, soil, groundwater, surface water, and subsurface gas. The potential for release via these five pathways is assessed for each Solid Waste Management Unit. A discussion of each pathway is provided below.

Air - Some air monitoring has been performed at this site voluntarily by the facility; however, this information was not provided by facility personnel. Minimal to moderate releases to the air are suspected. No significant odors were noted at the facility during the VSI, and volatile organic wastes are all generated and managed in the interior of the manufacturing area. No volatile organics are treated in the outdoor wastewater treatment system.

Soil - Prior to 1982, hazardous waste generated at the site was stored in drums on an outdoor, graveled area with no secondary containment. The soil directly underlaid the gravel.

Additionally, in the past, the facility utilized a standard underground septic tank and septic field, with releases directly to the soil.

Also, the facility currently maintains an underground Batch Treatment Tank which was a part of the original waste treatment system. No assessment of this underground concrete tank has been performed since the tank went underground in 1982.

No soil sampling in the vicinity of these units has been performed. However, a closure plan is currently under review at the Virginia Department of Waste Management for proper closure of the old drum storage area, which would involve sampling for constituents of the waste stored at the site. Soil samples were taken in the vicinity of documented releases at the site, as described below.

Groundwater - No groundwater monitoring has been performed at this facility.

Surface Water - The Herring Branch runs in an approximately North to South direction 1500 feet from the facility at its closest point, and intersects the North Fork approximately one mile downstream of the facility. The facility has an NPDES from the Virginia State Water Control Board for routine discharges to the Herring Branch, and monitors for discharge parameters continuously.

Subsurface Gas - No subsurface gas monitoring has been documented. Potential releases to this media are thought to be low or negligible.

Documented Releases - The corrective action response letter dated November 3, 1986, disclosed the following release of hazardous waste at the facility:

During the weekend of September 12 - 13, 1986, potable water in the manufacturing area ran into floor drains and into the hazardous waste storage building (SWMU #15) via a six (6) inch pipe. The HWSB has a 6000 gallon capacity cement diked area to hold waste from the electroplating area. The electroplating wastes are released into the area on an infrequent basis, and are later pumped into a fiberglass bulk storage tank (SWMU #10), following which they are transferred to a haul-away truck for disposition. The spent plating solutions are gravity-fed to the HWSB and into the sump within the diked containment area of the bulk storage tank. This sump accumulated approximately 500 - 1,000 gallons of hazardous waste before it is manually transferred to the bulk storage tank. The bulk storage tank is filled every 4 to 6 weeks, depending on the process requirements. The level of liquid at this time had exceeded the normal operating level to transfer the hazardous waste (exceeding the sump volume). It was also determined that the level of liquid in the diked area had dropped for no apparent reason. On October 6, 1986, it was determined that a section of pipe at a depth of approximately six (6) feet had developed a longitudinal crack. The pipe was replaced. Approximately 20 cubic yards of soil around the pipe break were removed. Soil samples analyzed indicated 14 ppm 1,1,1-trichloroethane. Soil samples were taken at a depth of 13 feet to determine whether additional amounts of solvent were present. Additional soil was removed at the site. The hole was backfilled with a layer of bentonite and a second layer of soil.[23]

Other minor unscheduled discharges have been reported to the State Water Control Board. However, these releases (described in the Release portion of the applicable SWMU data), when combined with the normal scheduled discharges, were within the NPDES permit parameters (see specific SWMUs for release information).

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[23]Corrective Action Response Letter, November 3, 1986.

VIII. SOLID WASTE MANAGEMENT UNITS

SWMU 1 - Former Industrial Waste Treatment Facility

Description: The former industrial waste treatment facility consisted of the following units: a) A 60,000 gallon capacity in-ground concrete tank (batch treatment tank) lined with an epoxy material (SWMU 2); b) a transfer/mixing sump; c) a horizontal pressure filter shell with vertical leaves housed within a filter building; d) a final effluent tank; and control instrumentation. Also located in the facility was a bulk storage tank (SWMU 2) which was used to temporarily manage (accumulate) the F006 filter cake which was generated by the wastewater treatment system. The pressure filter, which is a Duriron filter with 19 leaves and a capacity of 200 gallons/minute, uses diatomaceous earth as an additional filter medium, and has a filtering area of approximately 500 square feet. The system treats industrial wastewater by precipitation and removal of metallic components as hydroxides and sulfides. The pressure filter discharges the impurities as a solid cake (F006).[24]

The Batch Treatment Tank is a 60,000 gallon capacity, in-ground, open-top reinforced concrete tank coated with a coal tar/epoxy liner with the dimensions 22'6" by 20', with 2' of freeboard maintained at all times. Rinsewaters from the plating operation flowed into the Batch Tank as the first step of the treatment process, where pH was adjusted using lime. The rinsewater then flowed into the transfer/mixing sump, where diatomaceous earth was added as a flocculent to the wastewaters, and metals were precipitated from solution. The wastewaters then flowed into the filter building, where the solid were collected on the filter, subsequently filter pressed, and collected in drums. The liquid portion then flowed on to the equalization tank, where pH was readjusted using sulfuric acid. The waste was then discharged.

Date of Start-up: This facility began operation, following receipt of a NPDES permit, in May, 1977.[25]

Date of Closure: The facility ceased operation when the new Industrial Waste Treatment facility began operation in February, 1982. All process equipment from the former IWT facility was relocated to the present IWT facility, except the former Batch Process Tank and the Bulk Storage Tank. The Batch Process Tank was not closed, but is currently used under the name "Photo Lab IWT Interim Storage Tank". When

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[24] Solid Waste Management Unit Response Letter, dated April 11, 1986.

[25] SWMU Response letter.

the former IWT ceased operation in 1982, the capacity of the unit was decreased to 45,000 gallons by removing the aboveground portions of the tank, placing a lid on the tank, and placing dirt on top of the lid, thus rendering the tank "underground" (see SWMU 7 for more information).[26] The Bulk Storage Tank was (in 1982) emptied, triple rinsed, removed and disposed at the facility, and is currently undergoing formal closure. No documentation of any type of closure is maintained at the facility.

Wastes Managed: Treatable wastewater and rinsewaters from facility printed circuit board electroplating operations (this was the only type of manufacturing operation conducted at the facility at the time).

Release Controls: The unit was located on 6" of reinforced concrete, and housed within cinderblock walls beneath a wooden and shingled roof.[27]

History of Releases: On November 24, 1981, during construction earthmoving operations, the inlet lines to the IWT were ruptured and an estimated 520 gallons of untreated plating rinses were released containing 0.26 total pounds of copper and other metals associated with the printed circuit board plating operations. This day the IWT was operational and discharged approximately 0.08 lb/copper, for a total of 0.34 total pounds of copper discharged. The NPDES permitted amount for copper was 0.42 lb/day. Therefore, the sum of both the treated and untreated discharges was less than the permit parameter.[28]

On Friday, August 12, and on Friday, August 19, 1983, minor discharges of approximately 1,000 and 800 gallons, respectively, of IWT influent bypassed the normal treatment process and were discharged into the Herring Branch via the waterway located along the southern edge of the GE property. These unscheduled discharges occurred when the IWT influent sump pumps were inadvertently left off. The volume and analysis of the spillage were accounted for via mathematical calculations by the company. It is stated that although these minor unscheduled discharges, when combined with the facility's normal scheduled discharges, raised the values of the discharged components above the normal monthly averages, the totals were still within NPDES permit parameters. Following the spill, on November 2, 1983, to prevent future occurrences, the inlet and outlet lines of the low manhole were connected to provide a positive joint and seal the line

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[26] Information provided by James Morrisard, Health and Safety Officer, GE Fanuc, during the Visual Site inspection.

[27] Information provided by James Morrisard during Visual Site Inspection.

[28] SWMU Response Letter.

so that no leakage could occur in the event that the influent sump pumps were accidentally turned off in the future.[29]

On May 14, 1981, during excavation work, the underground feed line to the IWT batch process tank was ruptured and discharged approximately 12 GPM for 30 minutes for a total discharge of about 360 gallons containing 60 ppm copper or 0.18 lbs. copper. The IWT plant was not operated this date so that the total discharge of copper was 0.18 lbs.[30]

On November 30, 1981, a break/leak was observed in the line running from the Fabrication Building to the IWT Batch Process Tank. The effluent was leaking out of the line at approximately 2 gallons/minute just southwest of the Batch Tank. Test results provided a copper level of 10.8 ppm in the spilled area. The break was estimated to have lasted for approximately 3 hours, for a calculated maximum of .18 lbs of copper. The NPDES parameter for copper is 0.42 pounds per day. Since all discharges were released into the same drainage system as the facility's permitted discharge point, it was assumed by the facility that the NPDES permit parameter was not exceeded.

On December 21, 1981, a break in a potable water line allowed water to flow into the IWT batch treatment tank until it overflowed. It is not known exactly how long the overflow persisted, but the company's best estimated indicated that the diluted solution did not contain a large amount of copper.

Current Condition of Unit: The unit was taken out of service in 1982. The only portion of the old area still in use is the Batch Treatment Tank, which is located underground and could not be viewed during the VSI. The control equipment and Duriron filter were moved to the new IWT and remain in good condition.

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[29] SWMU Response Letter, page 4.

[30] SWMU Response Letter.

SWMU 2 - Former IWT Bulk Storage Tank

Description: This unit was an approximately 5200 gallon carbon steel, closed-top cylindrical tank with a liner situated up on saddles on the horizontal with a manhole in the top of the tank.[31]

Date of Start-up: The unit began operation when the former IWT began operation in May, 1977.

Date of Closure: This unit was emptied, triple rinsed, removed and disposed when the new IWT facility was placed in operation in February, 1982. The Department of Waste Management is currently requiring formal closure of the unit prior to issuing the facility Hazardous Waste Management Permit.

Wastes Managed: Non-treatable baths generated in the electroplating operation, hazardous waste codes F007/F008 and D002/D008.

Release Controls: The unit was housed within the walls of the IWT building, and was located on a concrete floor. To gain entry into the building, it was required to take one step down to floor level from ground level. This one step concrete "sump" served to contain any releases of waste from the storage tank. While no documentation of the construction of the release control is in existence, it was stated during the VSI that the concrete would have been 6" reinforced concrete.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: No evidence of the unit remains intact.

[31] Information provided by Mr. Morrisard during the VSI.

SWMU 3 - Former IWT Drum Storage Area

Description: This unit is a 41' by 47' gravel area with gravel approximately 6" deep on which drums of waste were stored.[32]

Date of Start-up: The facility began using the unit sometime in late 1978 or early 1979. The specific date of start-up is not documented.

Date of Closure: The unit ceased operating when the former IWT ceased operation in 1982. However, the unit never underwent formal closure via a closure plan. No documentation of any closure action that took place in 1982 is maintained at the facility. The Virginia Department of Waste Management is currently seeking submission of a closure plan so that the area may be formally closed.

Wastes Managed: F006 Hazardous Waste Filter Cake generated in the former IWT plant.

Release Controls: The unit was located on gravel, and no release controls were present, except weekly inspection of the drum storage area to detect potential releases.

History of Releases: There were no documented releases of hazardous waste from this unit.

Current Condition of Unit: No evidence of the unit can be seen.

[32] Information provided by Mr. Morrisard during the VSI.

SWMU 4 - Solvent Recovery Still #1 (methylene chloride)

Description: This unit is a Baron-Blakeslee still located in the equipment room at the facility. It is a boiling sump with an approximately 100 gallon capacity, utilizing steam coils and cooling coils, which operates in a continuous mode when the facility has a need for clean product. It is connected to the facility process lines and represents a closed loop recycling system.

Date of Start-up: This unit began operation in 1974 or 1975 at the Harris Street location. The unit was moved and began operating at the Seminole Trail facility in 1982.

Date of Closure: The unit is currently operational. However, the facility intends to phase out the use of chlorinated solvents and hopes to close this unit by Summer, 1991.

Wastes Managed: Spent methylene chloride, hazardous waste code F001/2, used in degreasing, stripping and cold cleaning in the electroplating operations.

Release Controls: Steel reinforced concrete floors with bermed walls. The secondary containment has approximate dimensions of 6' by 12' by 15" high by 6" thick, and is more than adequate to contain the capacity of the still.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: The unit remains operational and in good condition. The secondary containment remains in good condition.

SWMU 5 - Solvent Recovery Still #2 (1,1,1,-trichloroethane)

Description: This unit is a Baron-Blakeslee still located in the equipment room at the facility. It is a boiling sump with an approximately 100 gallon capacity utilizing steam coils and cooling coils which operates in a continuous mode when the facility has a need for clean product. It is connected to the process lines, and represents a closed loop recycling system.

Date of Start-up: This unit began operation in 1974 or 1975 at the Harris Street location. The unit was moved and began operating at the Seminole Trail Facility in 1982.

Date of Closure: The unit is currently operational. However, the facility intends to phase out chlorinated solvents from use at the facility, and hopes to close this unit by Summer of 1991.

Wastes Managed: Spent 1,1,1-trichloroethane, hazardous waste code F001/2, used in degreasing, stripping and cold cleaning in electroplating operations.

Release Controls: Steel reinforced concrete floors with bermed walls. The secondary containment has the approximate dimensions of 29' by 10' by 15" high by 6" thick, and has more than adequate capacity to contain the contents of the still.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: The unit remains operational and in good condition. The secondary containment remains in good condition.

SWMU 6 - Equipment Room Spent Etchant Tank

Description: This unit is a fiberglass tank 10 feet in diameter, 11' 8" high including the dome tap and having a capacity of 5644 gallons.[33] This unit currently has interim status - the facility has filed a Part B Application to obtain a hazardous waste storage permit for the unit.

Date of Start-up: 1978[34]

Date of Closure: The unit is to be permitted. The Part B application provided an estimated date for closure of 2027.

Wastes Managed: Spent etchant

Release Controls: This tank is on a concrete floor and is contained within a concrete block diked area capable of holding the entire contents of the tank.[35] The unit is housed within secondary containment with dimensions of 20' by 30' by 3' high by 6" thick, and is housed within the same secondary containment as a Virgin Etchant Tank, with approximately 10,000 gallon capacity. However, the capacity of the secondary containment is more than adequate to contain the volume of the larger tank.

History of Releases: There have been no documented releases of waste from this unit.

Current Condition of Unit: The unit and secondary containment remain intact and in good condition.

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[33] Facility Part B Permit Application, Section D-1a(1), page 2.

[34] Information provided by Mr. Morrisard during the VSI.

[35] Facility Part B Permit Application, Section D-1a(1), page 2.

SWMU 7 - Photo Lab IWT Interim Storage Tank (former IWT batch process tank - modified)

Description: This unit is a 45,000 gallon capacity, underground, closed-top reinforced concrete tank coated with a coal tar/epoxy liner with the dimensions 22'6" by 20'. The tank was created when the former IWT batch process tank was cut down in size, lidded, and covered with dirt, rendering the previous in-ground tank and underground tank.

Date of Start-up: When the former IWT was shut down in 1982, the IWT batch process tank was reduced in capacity, lidded, and buried, resulting in the Photo Lab IWT Interim Storage Tank.

Date of Closure: Anticipated for late 1991 or early 1992.

Wastes Managed: Rinsewater from Log E Photoprocessor (containing potassium carbonate, hydroquinone, sodium sulfate, sodium methanolbisulfate, tri-ethylene glycol, water, silver and cadmium), which is subsequently mixed with other process (F007) wastewater and sent to the IWT.

Release Controls: None, nor has there been any integrity assessment performed on the tank.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: As the unit is underground, the current condition of the unit could not be assessed during the VSI. However, it was stated during the VSI that no integrity assessments or inspections have been performed on the tank since 1982.

SWMU 8 - Equipment Room Satellite Accumulation Area

Description: This unit is an approximately 2' by 2' area of concrete on the floor of the equipment room used to accumulate no more than one 55-gallon drum of hazardous waste at one time.

Date of Start-up: 1982, when the stills were moved from the Harris Street location.

Date of Closure: The unit is currently operational, with no anticipated date for closure.

Wastes Managed: Still bottoms, hazardous waste codes F001 and F002.

Release Controls: The area is located on the reinforced concrete floor of the equipment room, surrounded by walls and a roof.

History of Releases: There have been no documented releases of waste from this unit.

Current Condition of Unit: This unit is currently in good condition and is managed properly.

SWMU 9 - Plating Solution Sump

Description: This unit is located in the current Hazardous Waste Storage Building (SWMU 12) and is part of the secondary containment system for the Bulk-Haul Away Tank. The unit is constructed of steel-reinforced concrete with dimension of 3' by 5' by 4.5' deep with an approximated capacity of 500 gallons.

Date of Start-up: Began operation when the current IWT system began operating in 1982. From 1982 until January, 1988, wastes were gravity fed to the sump from the plating operation, and then were subsequently pumped to the Bulk Haul-Away Tank (SWMU 10), and off-site. In 1988, the facility ceased using the sump for this purpose, and began using it solely for secondary containment. Wastes are now pumped directly from the manufacturing area through a pipeline (with secondary containment) to the top of the bulk tank..

Date of Closure: The unit ceased operation as an active waste management unit in 1988, but continues to serve as part of the secondary containment system for the Bulk Haul Away Tank in the Hazardous Waste Storage Building (SWMU 10).

Wastes Managed: Spent plating bath solution (D002).

Release Controls: The unit is part of the secondary containment system, and has no release controls.

History of Releases: None documented.

Current Condition of Unit: The unit is an operational portion of the secondary containment system, and does not appear to have any cracks, gaps, or areas of poor integrity.

SWMU 10 - Plating Room Bulk Storage Tank

Description: Located on-ground, the unit is a 6,462 gallon capacity, fiberglass tank manufactured in December, 1981, by Justing FRP tanks. The design pressure is atmospheric. The design and operating temperature is ambient. The interior surface reinforcement is 10 mil "C" glass. The structure and corrosion barrier resin is DERAKANE 411 (vinyl ESTER RESIN).[36] This unit currently has interim status - the facility has filed a Part B Application to obtain a hazardous waste storage permit for the unit.

Date of Start-up: The unit was newly installed with the HW Storage Building in 1982.

Date of Closure: The unit is intended to be permitted, with an estimated date for closure of 2027.[37]

Wastes Managed: Spent plating bath solution and other rinsewaters that are non-treatable in the wastewater treatment system. The waste stream has been analyzed and found to be made up of 3 - 5% copper sulfate, 3 - 5% sulfuric acid, 1 - 3% fluoboric acid, chlorides less than 1%, formates less than 1%, trace metals less than 1%, and 85 - 90% water. The pH of the waste material is less than 2.0.[38]

Release Controls: The tank is situated in a 4 foot deep containment area of concrete which slopes into a 4.8 foot deep sump.[39]

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of the Unit: The unit and secondary containment are in excellent condition.

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[36] Facility Part B Permit Application, Section D-1a(1), pg. 1.

[37] Part B Permit Application

[38] Facility Part B Permit Application, Section D-1a(1), page 1.

[39] Revised Facility Management Plan, page 4.

SWMU 11 - Present Industrial Waste Treatment Plant

Description: The present industrial waste treatment facility consisted of the following units: a) A 55,000 gallon capacity concrete tank lined with an epoxy material (SWMU 2); b) an agitator; c) a horizontal pressure filter shell with vertical leaves; d) a Transfer Sump; e) An Influent Sump; f) a Mixing Sump; g) Two Final Effluent (Equalization) Tanks; and control instrumentation. The pressure filter uses diatomaceous earth as an additional filter medium, and has a filtering area of approximately 500 square feet. The system treats industrial wastewater by precipitation and removal of metallic components as hydroxides and sulfides. The pressure filter discharges the impurities as a solid cake (F006).

The Batch Treatment Tank is a 60,000 gallon, in-ground, reinforced concrete tank with inside dimensions 20' by 20' by 21' deep. (See Diagrams C301 and C302 in Attachment VII).

The Transfer Sump is a monolithic, reinforced concrete, in-ground sump measuring 7'3" by 7' by 24'1" deep. The unit shares a wall with the SWMU 11b (IWT Batch Tank), and another wall with the IWT Mixing Sump. (See Diagrams C301 and C302 in Attachment VII).

The Influent Sump is a monolithic, reinforced concrete, in-ground sump measuring 7'3" by 5' by 15' deep. The unit shares a wall with the SWMU 11b (IWT Batch Tank), and another wall with the IWT Mixing Sump. (See Diagrams C301 and C302 in Attachment VII).

The Mixing Sump is a monolithic, reinforced concrete, in-ground sump measuring 7'3" by 6'6" by 10.5' deep. The unit shares a wall with the SWMU 11b (IWT Batch Tank), and other walls with the IWT Transfer Sump and IWT Influent Sump. (See Diagrams C301 and C302 in Attachment VII).

Date of Start-up: The unit was newly constructed in 1982.

Date of Closure: The unit is currently operated, with no anticipated date for closure.

Wastes Managed: This unit is used to manage all treatable rinsewater waste generated at the facility; that is, all wastes generated at the facility except F006, still bottoms, F007/F008, D002/D008, F001, F003/F005, F002 freon for post solder cleaning, and spent photo lab waste.

Release Controls: The IWT is housed in a building with metal walls, concrete curbs at the doors, a ramp leading to the roll-up door, all on top of a reinforced concrete base.

History of Releases: There have been no documented releases of waste from this unit.

Current Condition of Unit: The unit is currently operational and in good condition.

SWMU 12 - Hazardous Waste Storage Building Container Storage Area

Description: A roofed structure with walls and doors with a base comprised of concrete which will be diked into four segregated storage areas (bays). Wastes are stored in carbon steel 55-gallon capacity drums, corresponding to DOT specification 17H, 17E, and 6D with liner are used for storage of hazardous wastes. Drums used for storage are typically the product drums in which the waste solvents generated at the plant were originally brought to the plant. This unit currently has interim status - the facility has filed a Part B Application to obtain a hazardous waste storage permit for the unit. Bay #1 has a capacity of 50 55-gallon drums for solids. Bay #2 has the capacity to store 11 55-gallon drums of ignitable hazardous waste. Bay #3 can hold 40 55-gallon drums of corrosive hazardous waste, and Bay #4 can hold 24 55-gallon drums of halogenated solvents.

Date of Start-up: The unit was installed and began operation in 1982.

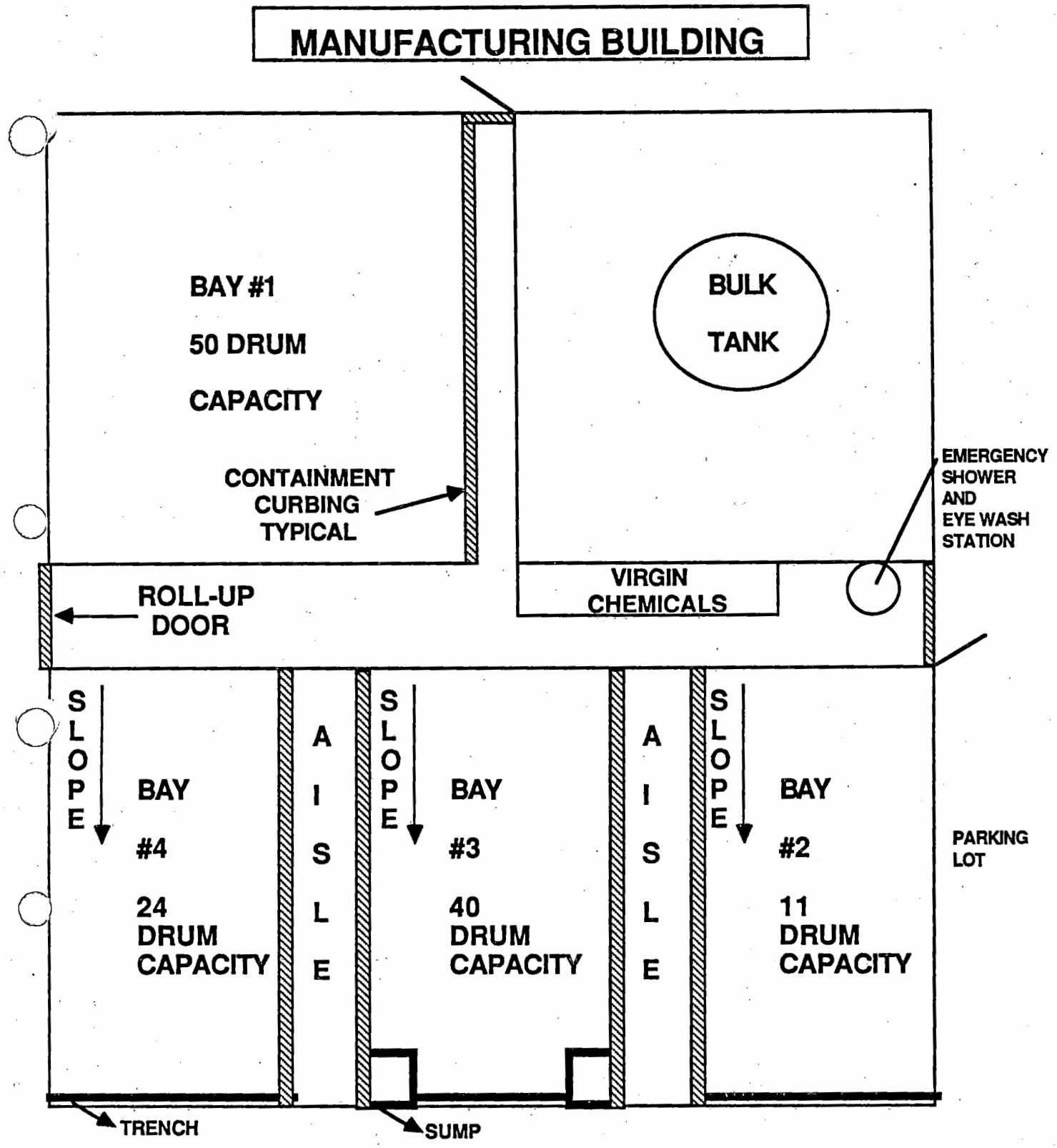
Date of Closure: A Part B permit application has been filed for the unit, and the unit is to be permitted, with an estimated date of closure of 2027.

Wastes Managed: Drums containing the following: D011/D006 spent fixer and developer; F006 sludge from IWT filter press; F002 spent freon and filter cartridges from freon degreaser machine; solid material, D002/D008, from etching bath; spent xylene and MEK from silk screening operation, F003/F005; F001 still bottoms from spent methylene chloride recycling from photo resist stripping; F001 still bottoms from 1,1,1-trichloroethane recycling from C-Processor; D001 waste petroleum naphtha from flushing CAD system; and D001 waste isopropyl from cleaning process equipment.

Release Controls: The secondary containment system for the facility consists of four segregated, separately contained storage bays located within a larger contained area, which includes the central aisle of the storage facility. Each bay has a four (4) inch wide 3/4 inch deep trench running the length of the bay. The entire unit has been installed on 6" reinforced concrete, and the bays are separated with 6" reinforced concrete berms.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: The unit is currently operational and in excellent condition.



HAZARDOUS WASTE STORAGE BUILDING

EXHIBIT D - 3

SWMU 13 - C Processor Satellite Accumulation Area

Description: The unit consists of two 5-gallon containers located adjacent to the C-processor unit.
Date of Start-up: 1982, when the C processor began operation at the site.
Date of Closure: The unit is currently operational, with no anticipated date for closure.
Wastes Managed: Spent 1,1,1-trichloroethane from developing photoresist on film.
Release Controls: The unit is located on a reinforced concrete floor within the manufacturing area; that is, underneath a roof and surrounded by walls.
History of Releases: There have been no documented releases of waste from this unit.
Current Condition of Unit: The unit is currently operational and managed properly.

SWMU 14 - IWT Hazardous Waste Accumulation Area

Description: This unit is a reinforced concrete floor of the filter building located beneath the filter press were dried filter cake falls from the filter press into 55-gallon drums located in the area. One and one half drums per run are generated, and a run is completed every 4 to 6 hours of operation. During the VSI, there were two drums located at the unit.

Date of Start-up: The unit began operation in 1982.

Date of Closure: The unit is currently operation with no anticipated date for closure.

Wastes Managed: F006 wastewater treatment sludge dried filter cake.

Release Controls: The unit is located on a reinforced concrete pad within the confines of the filter building, which is a section of the IWT Building, which is located within metal walls and under a roof. The concrete floor contains floor drains, the contents of which can be pumped back to the batch tank to be retreated in the IWT.

History of Releases: There have been no documented releases of waste from this unit.

Current Condition of Unit: The unit is currently operational and in good condition.

SWMU 15 - Photo Lab Hazardous Waste Accumulation Area

Description: The unit consists of an area of concrete covered with tile on the floor of the photo lab near the developing equipment. The concrete is the reinforced concrete floor of the photo lab area. Wastes generated in the photo lab that are originally accumulated in the 5-gallon containers at the satellite area (SWMU 16) are subsequently moved to the photo lab accumulation area and transferred to 55-gallon drums for less than 90-day accumulation.

Date of Start-up: 1982

Date of Closure: The unit is currently operational with no anticipated date for closure.

Wastes Managed: Waste solution and spent chemicals generated in the developing of photograph, hazardous waste codes D006/D011.

Release Controls: The unit is located on a reinforced concrete floor within the walls and under the roof of the photo lab.

History of Releases: There have been no documented releases of waste from this unit.

Current Condition of Unit: The unit is currently operational and in good condition.

SWMU 16 - Photo Lab Satellite Accumulation Area

Description: The unit consist of 2 5-gallon containers located near the photo lab developer equipment (also known as the Log E Photoprocessor.)

Date of Start-up: 1982 (The unit began operating when the photo lab operation began at this facility.)

Date of Closure: The unit is currently operational, with no anticipated date for closure.

Wastes Managed: Waste solution and spent chemicals generated in the developing of photograph, hazardous waste codes D006/D011.

Release Controls: The unit is located on a reinforced concrete floor within the walls and under the roof of the photo lab.

History of Releases: There have been no documented releases of waste from this unit.

Current Condition of Unit: The unit is currently operational and in good condition.

SWMU 17 - Drilling Room Dust Collector

Description: This area consists of a Hoffman Dust collector used to collect drill and routing dust from the individual pieces of equipment to which it is generated. This dust is generated when holes are drilled into the plated circuit boards.

Date of Start-up: The unit was installed at the facility in 1982.

Date of Closure: The unit is currently operational, with no anticipated date for closure.

Wastes Managed: Drill and routing dust, hazardous waste code D008 (exhibits the TCLP, not EP, toxicity characteristic).

Release Controls: The unit is housed under roof and within the walls of the electroplating operations area. The unit discharges to 55-gallon drums, of which approximately 75 are generated from the unit per year. The drum is underlaid by the reinforced concrete that makes up the facility floor.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: The unit is currently operational and in good condition.

SWMU 18 - Septic Field/ Septic Tank(s)

Description: No information is known regarding the description of this unit. However, drawing #C-1 (see Attachment I), provides a drawing of the location of the unit at the facility.

Date of Start-up: The facility installed the septic tank at start up of the plant in 1978.

Date of Closure: The facility ceased using the septic tank in early 1979, when hook up to the Rivanna Water and Sewer Authority was completed. However, the unit was not in any way closed.

Wastes Managed: This unit managed sanitary sewage generated in the fabrication area of facility prior to the facility's hooking up to the Rivanna Water and Sewage Authority.

Release Controls: The unit had no release controls.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: The unit is no longer in operation. As it is located underground, the unit could not be examined during the VSI.

SWMU 19 - Sanitary Sewage Lift Station

Description: This area, located outside the Photo Lab at the facility, consists of an underground steel tank with a metal lid on ground level and two pumps. Wastes at the lift station are commingled with wastes generated in other areas of the facility that come from the Ejector Station (SWMU 20), which are then subsequently pumped off-site to the Rivanna Water & Sewer Authority.

Date of Start-up: The unit was installed in 1982 when the facility was expanded.

Date of Closure: The unit is currently operational with no anticipated date for closure.

Wastes Managed: Sanitary sewage generated at the facility.

Release Controls: The steel tank is housed within a reinforced concrete vault below ground.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: The unit appears to be in good condition; however, since the unit is below-ground, all exterior portions of the unit could not be observed during the VSI.

SWMU 20 - Sanitary Sewage Ejector Station

Description: This area, located in the South Parking Lot of the facility, consists of an air compressor and a steel tank within a concrete and steel pit. Sewage is gravity fed to the unit. The sewage is then "blown" to the other side of the property, where it joins with waste from other portions of the facility at the lift station, where it is then pumped off-site.

Date of Start-up: The unit was installed in 1982 when the facility was expanded.

Date of Closure: The unit is currently operational with no anticipated date for closure.

Wastes Managed: Sanitary sewage generated at the facility.

Release Controls: The unit is located below-ground within a reinforced concrete vault.

History of Releases: There have been no documented releases of hazardous waste from this unit.

Current Condition of Unit: The unit appears to be in good condition; however, since the unit is below-ground, all exterior portions of the unit could not be observed during the VSI.

IX. CONCLUSIONS AND RECOMMENDATIONS FOR ADDITIONAL STUDY BY OWNER/OPERATOR

SWMU #1 - Former Industrial Waste Treatment Facility

Conclusions Regarding Potential Releases:

Air - Releases to the air were likely to have been negligible as the facility was treating only electroplating rinsewaters in the unit during its period of operation.

Soil - Potential for releases to the soil from this unit is low.

Groundwater - Potential for releases to the groundwater from this unit is low.

Surface Water - This unit served to treat facility wastewaters prior to discharge via a NPDES into the Herring Branch. Discharge parameters are monitored continuously. Releases from this unit during its active life have been documented; therefore, the potential for releases from this unit was high.

Subsurface Gas - Potential for releases to this media is negligible.

Information Needed: None.

Recommendations: As the analytical results from the release information regarding the unit indicate that contamination was either removed or within discharge parameters for the unit, no additional action is necessary.

SWMU #2 - Former IWT Bulk Storage Tank

Conclusions Regarding Potential Releases:

Air - The unit was a closed-top tank used to manage non-volatile F007/F008 and D002/D008 hazardous waste generated at the facility. The potential for releases to the air is thought to be low.

Soil - As the unit was housed within a building and on a concrete floor, potential for releases to the soil from the unit is thought to be low.

Groundwater - As the unit was located on a concrete floor with no documented releases, potential for release from this unit to the groundwater is thought to be low.

Surface Water - Due to the secondary containment and the fact that the unit was housed indoors, potential for releases from the unit to the surface water is thought to be negligible.

Subsurface Gas - As the unit was housed within the former IWT building on a concrete floor, releases of gas to the subsurface from this unit are thought to be negligible.

Information Needed: Information regarding closure of the unit.

Recommendations: While the unit had not been properly closed in the past, it is recommended that a proper closure be conducted on the unit, including sampling of underlying soils, etc. The Virginia Department of Waste Management is currently requiring proper RCRA closure of the unit. Following closure, the facility must provide documentation of the closure, including a demonstration that clean closure has been achieved. If the unit cannot clean close, the facility must obtain groundwater samples from the vicinity of the unit, and have these samples analyzed for the constituents of the waste managed in the unit to assess routine releases to the groundwater, since groundwater information is not being required during closure of the unit.

SWMU #3 - Former IWT Drum Storage Area

Conclusions Regarding Potential Releases:

Air - As the drums were kept closed, potential for releases to the air from the unit would have been negligible.

Soil - As the drums were stored in a graveled area with no secondary containment, any spill to the gravel would have seeped to the soil. While there were no documented spills of this type at the unit, potential for releases to the soil from this unit were high. No soil characterization at closure was performed.

Groundwater - As the drums were stored in a graveled area with no secondary containment, any spill to the gravel would have seeped to the soil, and eventually released to the groundwater. Potential for releases to the groundwater from this unit would have been high.

Surface Water - Because of where the IWT Drum Storage Area was situated at the facility relative to the surface water, potential for releases to this media would have been negligible.

Subsurface Gas - Potential for releases to this media are negligible.

Information Needed: More information on the closure of the unit; analytical results for the area underlying the unit; groundwater monitoring data from the vicinity of the unit.

Recommendations: The company must provide documentation of closure of the unit (currently taking place under the Virginia Department of Waste Management) once this information is available. If clean closure of the unit cannot be achieved under the Virginia Department of Waste Management action, it is also recommended that the facility obtain groundwater samples from the vicinity of the unit, and have these samples analyzed for the constituents of the waste managed in the unit to assess routine releases to the groundwater, since groundwater information is not being required during closure of the unit.

SWMU #4 - Solvent Recovery Still #1

Conclusions Regarding Potential Releases:

Air - As the unit is a closed loop recycling area, releases to the air from the unit should consist only of fugitive emissions. Potential for release from the unit to the air is moderate.

Soil - The unit is housed indoors on a concrete floor. Releases to the soil are negligible.

Groundwater - Releases to the groundwater are negligible.

Surface Water - Releases to the surface water from the unit have not occurred, and are therefore negligible.

Subsurface Gas - Releases of gas to the subsurface from the unit are negligible.

Information Needed: None

Recommendation: No further action is recommended.

SWMU #5 - Solvent Recovery Still #2

Conclusions Regarding Potential Releases:

Air - As the unit is a closed loop recycling area, releases to the air from the unit should consist only of fugitive emissions. Potential for release to the air from the unit is moderate.

Soil - The unit is housed indoors on a concrete floor. Releases to the soil are negligible.

Groundwater - Releases to the groundwater are negligible.

Surface Water - Releases to the surface water from the unit have not occurred, and are therefore negligible.

Subsurface Gas - Releases of gas to the subsurface from the unit are negligible.

Information Needed: None

Recommendation: No further action is required on this unit.

SWMU #6 - Equipment Room Spent Etchant Tank

Conclusions Regarding Potential Releases:

Air - The unit is a closed tank managing non-volatile spent etchant within the facility manufacturing building. Potential for releases to the air is low.

Soil - The unit is housed on a reinforced concrete floor within adequate secondary containment, and has not had any documented releases. Potential for release to the soil is low.

Groundwater - Potential for release to the groundwater is low.

Surface Water - Potential for release to the surface water is low.

Subsurface Gas - Potential for release of gas to the subsurface is low.

Information Needed: None.

Recommendation: No further action is recommended

SWMU #7 - Photo Lab IWT Interim Storage Tank

Conclusions Regarding Potential Releases:

Air - As the tank is closed and located underground, potential for release to the air from the unit is low.

Soil - The tank is located underground with no secondary containment. While no releases have been documented, neither have any tank assessments been performed. Potential for release to the soil from the unit is high. No soil sampling in the vicinity of the unit has been performed.

Groundwater - Potential release to the groundwater from the unit is high. No groundwater monitoring in the vicinity of the unit has been performed.

Surface Water - Potential for release to the surface water from the unit is low.

Subsurface Gas - As the tank is closed, potential for release of gas to the subsurface is low.

Information Needed: Tank assessment; groundwater monitoring data from the vicinity of the tank; soil sampling in the vicinity of the tank.

Recommendation: It is recommended that some type of tank assessment be performed to determine the tank's integrity. Additionally, soil sampling in the vicinity of the tank for the constituents of the waste managed in the tank, as well as groundwater monitoring for these constituents should be performed to determine the extent of routine releases to the soil and groundwater from the unit.

SWMU #8 - Equipment Room Satellite Accumulation Area

Conclusions Regarding Potential Releases:

Air - The drums accumulated in the unit are kept closed except as necessary to add or remove waste. However, during the addition of waste to the drum, the drum is open for a period of time. Potential for release to the air is moderate.

Soil - The unit is housed indoors on a concrete floor. Potential for release from the unit to the soil is negligible.

Groundwater - Potential for release to the groundwater from the unit is negligible.

Surface Water - Potential for release to the surface water from the unit is negligible.

Subsurface Gas - Potential for release to the subsurface from the unit is negligible.

Information Needed: None.

Recommendation: No further action is required.

SWMU #9 - Plating Solution Sump

Conclusions Regarding Potential Releases:

Air - The unit is open-topped. Potential for release from the unit to the air is moderate.

Soil - The sump is maintained dry, and is inspected daily with the Bulk Haul Away Tank to ensure there are no cracks, gaps, etc. Potential for release to the soil from the unit is low.

Groundwater - Potential for release to the groundwater from the unit is low.

Surface Water - Potential for release to the surface water from the unit is negligible.

Subsurface Gas - Potential for release to the subsurface from the unit is negligible.

Information Needed: None.

Recommendation: No further action is required.

SWMU 10 - Plating Room Bulk Storage (Bulk Haul Away) Tank

Conclusions Regarding Potential Releases:

Air - The unit is a closed tank. Potential for release to the air from the unit is low.

Soil - The unit is located indoors on a concrete pad with secondary containment, and is inspected daily. Potential for release to the soil from the unit is low.

Groundwater - Potential for release to the groundwater is low.

Surface Water - Potential for release to the surface water from the unit is negligible.

Subsurface Gas - Potential for release to the subsurface from the unit is negligible.

Information Needed: None.

Recommendation: No further action is required.

SWMU 11 - Present Industrial Waste Treatment Plant

Conclusions Regarding Potential Releases:

Air - The unit contains portions which are open-topped. Potential for release to the air from the unit is moderate. No air quality monitoring in the vicinity of the unit has been performed.

Soil - Potential for release to the soil from the unit is low.

Groundwater - Potential for release to the groundwater from the unit is low.

Surface Water - As the IWT treats waste prior to discharge to the surface water via a NPDES permit, potential for release to the surface water is high. However, the NPDES permit requires continuous monitoring of parameters.

Subsurface Gas - Potential for release to the subsurface from the unit is low.

Information Needed: Air quality monitoring data from the vicinity of the unit.

Recommendation: It is recommended that air quality monitoring be performed, if the facility has not already done so recently, in the vicinity of the unit to assess routine releases to the air from the unit. If the facility has performed this monitoring, the results of the monitoring should be provided.

SWMU 12 - Hazardous Waste Storage Building (HWSB)

Conclusions Regarding Potential Releases:

Air - All drums stored in the unit are managed closed, and removed closed. The drums are not vented. Potential for release to the air from the unit is negligible.

Soil - The unit is housed on a reinforced concrete pad which is bermed and inspected at least weekly. Potential for release to the soil from the unit is low.

Groundwater - Potential for release to the groundwater is low.

Surface Water - Potential for release to the surface water from the unit is negligible.

Subsurface Gas - Potential for release to the subsurface from the unit is negligible.

Information Needed: None.

Recommendation: No further action is required.

SWMU 13 - C Processor Satellite Accumulation Area

Conclusions Regarding Potential Releases:

Air - Potential for release to the air is moderate, as the drum is opened to add waste.

Soil - The unit is housed indoors on a reinforced concrete floor. Potential for release to the soil from the unit is low.

Groundwater - Potential for release to the groundwater from the unit is negligible.

Surface Water - Potential for release to the surface water from the unit is negligible.

Subsurface Gas - Potential for release to the subsurface from the unit is negligible.

Information Needed: None.

Recommendation: No further action is recommended.

SWMU 14 - IWT Hazardous Waste Accumulation Area

Conclusions Regarding Potential Releases:

Air - The drums are kept open during the 4 to 6 hour accumulation period. However, due to the solid nature of the waste (F006 filter cake), potential for release from the unit to the air is low.

Soil - As the unit is located indoors on a reinforced concrete floor, the potential for release to the soil from the unit is low.

Groundwater - Potential for release to the groundwater from the unit is low.

Surface Water - Potential for release to the surface water from the unit is negligible.

Subsurface Gas - Potential for release from the unit to the subsurface is negligible.

Information Needed: None.

Recommendation: No further action is required.

SWMU 15 - Photo Lab Hazardous Waste Accumulation Area

Conclusions Regarding Potential Releases:

Air - Potential for release to the air is moderate as the drums are opened periodically to transfer waste from the satellite accumulation area.

Soil - Potential for release to the soil from the unit is low as the unit is housed indoors on a reinforced concrete floor.

Groundwater - Potential for release to the groundwater from the unit is low.

Surface Water - Potential for release from the unit to the surface water is negligible.

Subsurface Gas - Potential for release from the unit to the subsurface is low.

Information Needed: None.

Recommendation: No further action is recommended.

SWMU 16 - Photo Lab Satellite Accumulation Area

Conclusions Regarding Potential Releases:

Air - The drums in this area are kept closed except as necessary to add or remove waste, which takes place periodically. Potential for releases to the air is moderate.

Soil - Potential for release from the unit to the soil is low as the unit is housed indoors and located on a reinforced concrete pad.

Groundwater - Potential for release from the unit to the groundwater is low.

Surface Water - Potential for release from the unit to the surface water is negligible.

Subsurface Gas - Potential for release from the unit to the subsurface is low.

Information Needed: None.

Recommendation: No further action is recommended.

SWMU 17 - Drilling Room Dust Collector

Conclusions Regarding Potential Releases:

Air - As the nature of the system is to prevent discharges of lead dust to the air, failure of the system could result in discharges to the air. Potential for releases from this unit is moderate.

Soil - As the unit is indoors on a concrete floor, potential for releases to the soil from this unit is low.

Groundwater - As the unit is indoors on a concrete floor, potential for releases to the groundwater from this unit is low.

Surface Water - As the unit is indoors on a concrete floor and inside walls, potential for releases to the surface water is low.

Subsurface Gas - Potential for releases of gas to the subsurface is low.

Information Needed: Air quality monitoring data in the dust generation and collection areas.

Recommendation: If the facility has not already done so, it is recommended that air quality monitoring be performed to assess routine releases related to the dust collector. If the facility has performed this monitoring recently, the results should be provided by the facility.

SWMU 18 - Septic Field/Septic Tank(s)

Conclusions Regarding Potential Releases:

Air - Potential for releases to the soil would have been low.

Soil - The nature of the unit was to discharge releases of sanitary sewage to the soil. Therefore, the potential for releases to this medial would have been high.

Groundwater - The nature of the unit was to discharge releases of sanitary sewage to the soil. It is believed that subsequent potential for releases to the groundwater would have been high.

Surface Water - Due to the placement of the septic field at the facility, it is believed that potential for releases to the surface water would have been negligible.

Subsurface Gas - Due to the nature of operation of the unit, it is believed that potential for releases of gas to the subsurface would have been high.

Information Needed: More information regarding the construction of the septic tanks and septic field; description of any closure activity performed; any analytical results for soil and groundwater in the vicinity of the septic field; analytical results for the content of the septic tank, if applicable.

Recommendation: It is recommended that the facility be required to provide information on the construction and closure of the septic area. It is also recommended that the facility obtain both soil and groundwater samples from the vicinity of the septic field, and have the samples analyzed for the constituents of all the wastes generated at the facility during the septic field's period of operation which could have been released to the facility sanitary sewage system. Additionally, it is recommended that, if the information provided indicates that the septic tank(s) was not cleaned out when operation was discontinued, the contents of the septic tank be sampled and analyzed for the constituents of the waste generated at the facility during its period of operation.

SWMU 19 - Sanitary Sewage Lift Station

Conclusions Regarding Potential Releases:

Air - The potential for releases to the air from this unit is low.

Soil - The unit is housed within a concrete vault-type structure underground. While the vault acts as secondary containment, no assessment of the integrity of the vault is performed no a regular basis. Therefore, the potential for releases to the soil from this unit is moderate.

Groundwater - Potential for releases to the groundwater from the unit is moderate.

Surface Water - Potential for release to the surface water from the unit is low.

Subsurface Gas - Potential for release to the subsurface from the unit is low.

Information Needed: None.

Recommendation: No further action is required.

SWMU 20 - Sanitary Sewage Ejector Station

Conclusions Regarding Potential Releases:

Air - The potential for releases to the air from this unit is low.

Soil - The unit is housed within a concrete vault-type structure underground. While the vault acts as secondary containment, no assessment of the integrity of the vault is performed on a regular basis. Therefore, the potential for releases to the soil from this unit is moderate.

Groundwater - Potential for releases to the groundwater from the unit is moderate.

Surface Water - Potential for release to the surface water from the unit is low.

Subsurface Gas - Potential for release to the subsurface from the unit is low.

Information Needed: None.

Recommendation: No further action is required.

X. VISUAL SITE INSPECTION

The Visual Site Inspection (VSI), the second step of the RFA process, focused on identifying SWMU's and provided visual evidence of releases at the facility. In addition, existence and location of SWMUs not identified in the Preliminary Review (PR) were determined.

The VSI was performed at GE Fanuc Automation facility on March 27 and 28, 1991.

The only equipment taken on the Site Visit was an Olympus 35 mm camera.

Four (4) SWMU's were identified during the VSI that had not previously been identified. These were SWMUs 17 - 20, the drilling room dust collector, the septic tank, the sanitary sewage lift station, and the sanitary sewage ejector station. All the SWMU's that remain in place were visually inspected during the site visit, except those which are located underground that could not be inspected.

XI. OBSERVATIONS

SWMU #1 - Former Industrial Waste Treatment Facility

1. Visual Evidence of Unit Characterization:
   No evidence of the unit remains intact at its original location. However, all of the process equipment was moved to the current IWT and remains in good condition. The former Batch Treatment Tank remains in place, but has been moved underground and could not be observed during the VSI.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #2 - Former IWT Bulk Storage Tank

1. Visual Evidence of Unit Characterization:
   No visual evidence of the unit remains.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #3 - Former IWT Drum Storage Area

1. Visual Evidence of Unit Characterization:
   No evidence of the unit could be seen. The patch of ground where the unit formerly stood was examined, but no signs of the unit could be seen.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #4 - Solvent Recovery Still #1

1. Visual Evidence of Unit Characterization:
   The area, including diking, remains intact and in good condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #5 - Solvent Recovery Still #2

1. Visual Evidence of Unit Characterization:
   The area, including diking, remains intact and in good condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #6 - Equipment Room Spent Etchant Tank

1. Visual Evidence of Unit Characterization:
   The area, including diking, remains intact and in excellent condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #7 - Photo Lab IWT Interim Storage Tank

1. Visual Evidence of Unit Characterization:
   The area, including diking, remains intact and in good condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #8 - Equipment Room Satellite Accumulation Area

1. Visual Evidence of Unit Characterization:
   The area remains operational and in good condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU #9 - Plating Solution Sump

1. Visual Evidence of Unit Characterization:
   The unit remains intact and in good condition.

2. Visual Evidence of Waste Characteristics:
   The unit was dry during the VSI, and no visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 10 - Plating Room Bulk Haul-Away (Storage) Tank

1. Visual Evidence of Unit Characterization:
   The unit remains intact and in good condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 11 - Present Industrial Waste Treatment Plant

1. Visual Evidence of Unit Characterization:
   The unit remains intact and in excellent condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 12 - Hazardous Waste Storage Building

1. Visual Evidence of Unit Characterization:
   The unit remains intact and in excellent condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 13 - C Processor Satellite Accumulation Area

1. Visual Evidence of Unit Characterization:
   The unit remains intact and managed properly.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 14 - IWT Hazardous Waste Accumulation Area

1. Visual Evidence of Unit Characterization:
   The unit remains intact and managed properly.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 15 - Photo Lab Hazardous Waste Accumulation Area

1. Visual Evidence of Unit Characterization:
   The unit remains intact and managed properly.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 16 - Photo Lab Satellite Accumulation Area

1. Visual Evidence of Unit Characterization:
   The unit remains intact and managed properly.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 17 - Drilling Room Dust Collector

1. Visual Evidence of Unit Characterization:
   The unit remains intact and in good condition.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 18 - Septic Field

1. Visual Evidence of Unit Characterization:
   No evidence of the unit could be seen during the VSI as the unit is underground and out-of-use.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 19 - Sanitary Sewage Lift Station

1. Visual Evidence of Unit Characterization:
   The unit remains intact. However, because the unit is underground, the unit could not be examined thoroughly.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

SWMU 20 - Sanitary Sewage Ejector Station

1. Visual Evidence of Unit Characterization:
   The unit remains intact. However, because the unit is underground, it could not be assessed thoroughly.

2. Visual Evidence of Waste Characteristics:
   No visual evidence of waste characteristics was noticed.

3. Visual Evidence of Pollution Migration Pathways:
   None were evident.

4. Visual Evidence of Releases:
   None were evident.

5. Visual Evidence of Exposure Potential:
   None.

Summary

A RCRA facility investigation (RFI) for the GE Fanuc Automation site is recommended to characterize the nature, extent and past releases to the soils, groundwater, surface water, subsurface gas, and air. A plan, which will address the identified SWMU's, should be established and submitted by GE Fanuc. At a minimum, the plan should address the information needed for each SWMU to fill in the data gaps. Included should be a schedule for completing the RFI.

It is felt that the following units may be, or may have been, impacting the environment:

SWMU 2, Former IWT Bulk Storage Tank
SWMU 3, Former IWT Drum Storage Area
SWMU 7, Photo Lab IWT Interim Storage Tank
SWMU 11, Present Industrial Waste Treatment (IWT) Plant
SWMU 17, Drilling Room Dust Collector
SWMU 18, Septic Field/Septic Tank(s)

It is recommended that more information be obtained, including the following: Past closure information and documentation of the current closure under the Virginia Department of Waste Management for SWMU #2 (Former IWT Bulk Storage Tank); Past closure information and documentation of the current closure taking place under the Virginia Department of Waste Management for SWMU 3 (Former IWT Drum Storage Area) when the unit was situated on gravel be obtained to determine whether or not releases to the soil may have occurred during this period.

For SWMU 2, it is also recommended that, if the unit cannot be clean closed under RCRA closure, the facility obtain groundwater samples from the vicinity of the former drum storage area, and have the samples analyzed for the constituents of all the wastes ever managed at the unit which could have been released to the groundwater.

For SWMU 3, it is also recommended that, if the unit cannot be clean closed under RCRA closure, the facility obtain groundwater samples from the vicinity of the former drum storage area, and have the samples analyzed for the constituents of all the wastes ever managed at the unit which could have been released to the groundwater.

For SWMU 7, it is recommended that some type of tank assessment be performed to determine the tank's integrity. Additionally, soil sampling in the vicinity of the tank for the constituents of the waste managed in the tank, as well as groundwater monitoring for these constituents, should be

performed to determine the extent of routine releases to the soil and groundwater from this unit.

For SWMU 11, it is recommended that air quality monitoring be performed in the vicinity of the unit to assess routine releases to the air from the unit.

For SWMU 17, it is recommended that air quality monitoring be performed in the vicinity of the unit to assess routine releases related to the unit.

For SWMU 18, it is recommended that the facility be required to provide information on the construction and closure of the septic area. It is also recommended that the facility obtain both soil and groundwater samples from the vicinity of the septic field, and have the samples analyzed for the constituents of all the wastes generated at the facility during the septic field's period of operation which could have been released to the facility sanitary sewage system. Additionally, it is recommended that, if the information provided indicates that the septic tank(s) was not cleaned out when operation was discontinued, the contents of the septic tank be sampled and analyzed for the constituents of the waste generated at the facility during its period of operation.

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